# Commercial Microwave—Technical Information

## 208/230 VAC, 60 Hz Models

## WDYRC2 P1326305M, P1329111M, P1329603M, P1329615M

- Due to possibility of personal injury or property damage, always contact an authorized technician for servicing or repair of this unit.
- This technical sheet replace 16021599 Rev.1.
- Refer to Service Manual RS2240003 for installation, operating, testing, troubleshooting, and disassembly instruction.

**⚠ CAUTION**

All safety information must be followed as provided in Service Manual RS2240003.

**⚠ WARNING**

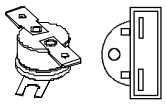
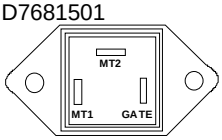
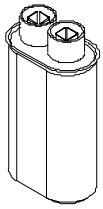
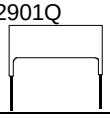
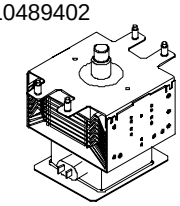
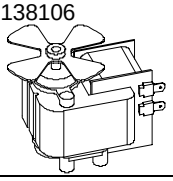
To avoid the risk of electrical shock, personal injury or death: disconnect power to oven and discharge capacitor before servicing, unless testing requires power.

| Models | WDYRC2 | |
|---|---|---|
| **Power Source** | | |
| Voltage AC | 208/230 VAC | |
| Amperage (Single Unit) | 20 A | |
| Frequency | 60 Hz | |
| Single Phase, 3 wire grounded | X | |
| Receptacle | 6–20R | |
| Plug | 6–20P | |
| **Power Output – Microwave** | | |
| Nominal microwave energy (IEC705) | 2000 Watts | |
| Operating Frequency | 2450 MHz | |
| **Power Consumption** | | |
| Microwave only | 3200 Watts | |
| **Dimensions** | | |
| **Cabinet (in cm)** | | |
| Width | 19 1/4" | 49 cm |
| Height | 18 1/4" | 46 cm |
| Depth | 26 1/4" | 67 cm |
| **Oven Interior (in cm)** | | |
| Width | 13" | 33 cm |
| Height | 8 1/2" | 22 cm |
| Depth | 15" | 38 cm |
| **Weight** | | |
| Uncrated | 115 lbs. | |
| Crated | 123 lbs. | |

# Component Testing Procedures

**⚠ WARNING**

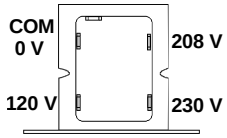
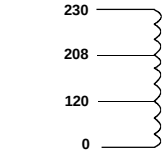
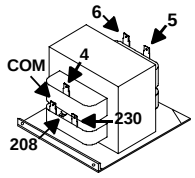
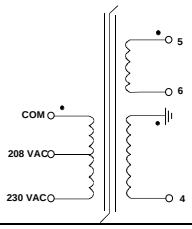
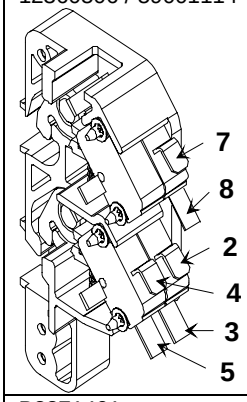
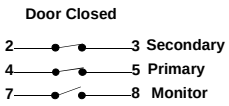
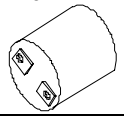
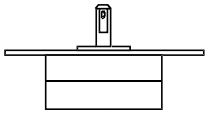
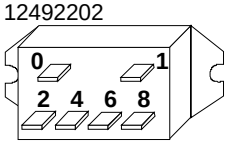
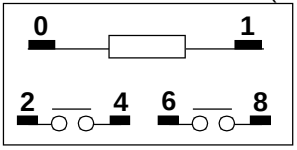
To avoid risk of electrical shock, personal injury or death: disconnect power to oven and discharge capacitor before servicing, unless testing requires power.

| Illustration | Component | Test | Results |
|---|---|---|---|
|  | Thermal cutout<br><br>B5684124 .....<br><br>B5795306 ..... | Disconnect all wires from TCO.<br>Measure resistance across terminals.<br>Magnetron TCO .....<br><br>Cavity TCO ..... | <br><br>Open at 300°F (149°C) and closed at 257°F (125°C)<br>Opens at 262°F (128°C) |
| B8383102<br> | Diode | **Discharge Capacitor**<br><br>Remove diode lead from capacitor and connect ohmmeter.<br><br>Reverse leads for second test. | Infinite resistance should be measured in one direction and 50KΩ or more in the opposite direction.<br><br>**NOTE:** Ohmmeter must contain a battery of 6 volts minimum. |
| D7681501<br>  <br><br>Triac 1 (center)<br>Triac 2 (left)<br>Triac 3 (right | Triac | **Resistance Check**<br>Disconnect wires to triac.<br><br>Measure resistance from:<br>MT1 to MT2 .....<br>MT1 to Gate.....<br>MT2 to Gate.....<br>All terminals to ground .....<br><br>**Voltage Check**<br>Measure voltage from:<br>MT1 to Gate | **Caution - Do not operate oven with wire to terminal MT2 removed.**<br><br><br>Infinite<br>Approximately 60 Ω<br>Infinite<br>Infinite<br><br>0.8 VAC when energized. If no voltage, check H.V. board and wiring. |
| 59001012—Qty 3<br>  | Capacitor | **Discharge Capacitor**<br><br>Remove wires from capacitor terminals and connect ohmmeter, set on highest resistance scale to terminals.<br><br>Also check between each terminal and capacitor case. | <br><br>Between Terminals: Meter should momentarily deflect towards zero then return to over 5 MΩ. If no deflection occurs, or if continuous deflection occurs, replace capacitor.<br><br>Terminal to Case: Infinite resistance |
| 10172901Q<br>  | Snubber assembly | Disconnect wires to snubber.<br><br>Measure resistance across terminals ..... | <br><br>Infinite |
| 10489402<br>  | Magnetron | **Discharge Capacitor**<br><br>Remove wires from magnetron and connect ohmmeter to terminals. Also check between each terminal and ground. | Between Terminals: Less than 1 Ω<br><br>Each terminal to ground measures Infinite resistance.<br>**Note:** This test is not conclusive. If oven does not heat and all other components test good replace the magnetron and retest. |
| 12138106<br>  | Blower motor | Remove all wires from motor.<br><br>Measure resistance across coil ..... | <br><br>Approximately 25 Ω |

# Component Testing Procedures

**⚠ WARNING**

To avoid risk of electrical shock, personal injury or death: disconnect power to oven and discharge capacitor before servicing, unless testing requires power.

| Illustration | Component | Test | Results |
|---|---|---|---|
| C8901509<br>  | Auto Transformer<br>  | **Discharge Capacitors**<br>Remove all wires from terminals.<br><br>Measure resistance from:<br>230 V to 0 V .....<br>208 V to 0 V .....<br>120 V to 0 V ..... | <br><br><br><br>Approximately 38 Ω<br>Approximately 37 Ω<br>Approximately 25 Ω |
| 10788613<br>  | Transformer<br>  | **Discharge Capacitor**<br>Remove all wires from terminals.<br><br>Measure resistance from:<br>230 to COM.....<br>208 to COM.....<br>230 to Ground .....<br>208 to Ground .....<br>Terminal 5 to 6 .....<br>Terminal 4 to Ground ..... | <br><br><br><br>Less than 1.1 Ω<br>Less than 1 Ω<br>Infinite<br>Infinite<br>Less than 1 Ω<br>Approximately 70 Ω |
| 12360506 / 59001114<br>  | Interlock switch<br>  | Disconnect wires to switch.<br><br>With door open measure resistance from:<br>Terminal 2 to 3 .....<br>Terminal 4 to 5 .....<br>Terminal 7 to 8 .....<br><br>With door closed measure resistance from:<br>Terminal 2 to 3 .....<br>Terminal 4 to 5 .....<br>Terminal 7 to 8 ..... | <br><br><br>Infinite<br>Infinite<br>Indicates continuity<br><br><br>Indicates continuity<br>Indicates continuity<br>Infinite |
| B8371401<br>  | Lamp receptacle | Test continuity of receptacle terminals. | Indicates continuity if bulb is good and screwed in. |
| R0130263<br>  | Antenna motor | Remove all wires from terminals.<br><br>Measure resistance from:<br>Terminal to terminal..... | <br><br><br>Approximately 12K Ω |
| R0131016 | Power cord | Measure resistance of wires. | Continuity should be indicated on each wire.<br><br>Verify polarity and grounding. |
| 12492202<br>  | Relay<br><br>This relay contains a diode in the coil circuit. | Measure resistance from:<br>Terminal 0 to terminal 1 (coil).....<br>  | <br>Approximately 6 to 7 MΩ<br><br>**NOTE:** Analog meter is recommended for measurement.<br><br>**NOTE:** If using a digital meter it must contain a battery of 6 volts minimum. |

# Component Testing Procedures

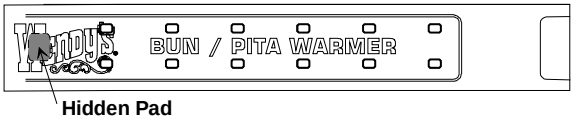
**WARNING**

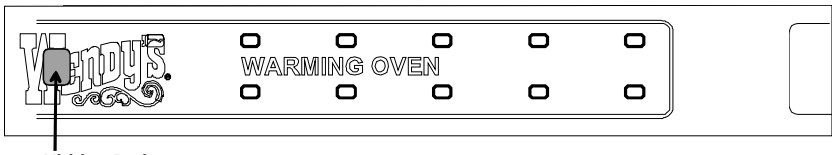
To avoid risk of electrical shock, personal injury or death: disconnect power to oven and discharge capacitor before servicing, unless testing requires power.

## Top Touch Panel

**R0130113**
P1326305M
P1329111M
P1329603M
**59001225**
P1329615M

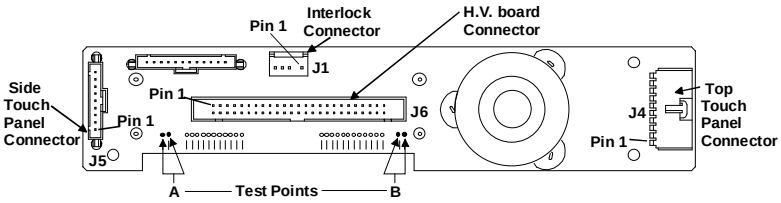
| Switch | Ribbon Trace | Ribbon Trace |
|---|---|---|
| Hidden Pad | 8 | 9 |

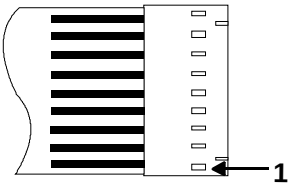



To test touch panel for proper operation:

1. Identify ribbon traces for selected touch panel using chart.
2. Resistance between selected traces = 0 ohms.
3. Pressing touch panel, resistance between selected traces is less than 40 ohms.

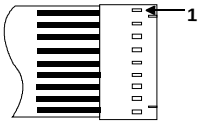



Ribbon Cable

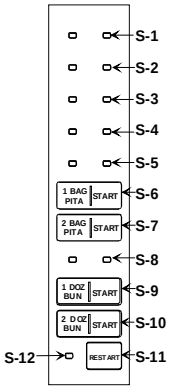
## Side Touch Panel

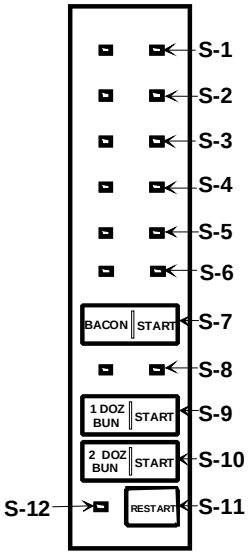
**R0130111**
P1326305M
P1329111M
P1329603M
**59001226**
P1329615M




Ribbon Cable

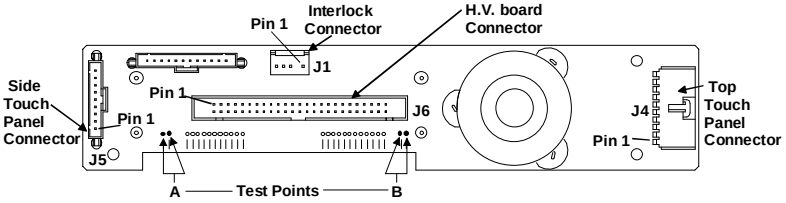
| Switch | Ribbon Trace | Ribbon Trace |
|---|---|---|
| S1 | 3 | 5 |
| S2 | 3 | 6 |
| S3 | 3 | 7 |
| S4 | 3 | 8 |
| S5 | 3 | 9 |
| S6 | 4 | 5 |
| S7 | 4 | 6 |
| S8 | 4 | 7 |
| S9 | 4 | 8 |
| S10 | 4 | 9 |
| S11 | 6 | 9 |
| S12 | 5 | 6 |




To test touch panel for proper operation:

1. Identify ribbon traces for selected touch panel using chart.
2. Resistance between selected traces = 0 ohms.
3. Pressing touch panel, resistance between selected traces is less than 40 ohms.

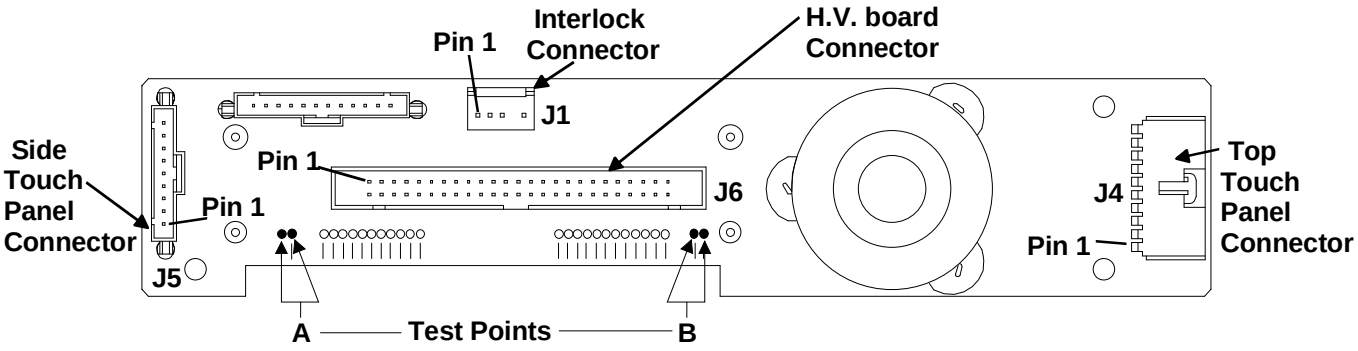


# Component Testing Procedures

**WARNING**

To avoid risk of electrical shock, personal injury or death: disconnect power to oven and discharge capacitor before servicing, unless testing requires power.

Display board
12502401




| Function | Test Set-Up | Meter Setting | Probe Placement | Results |
|---|---|---|---|---|
| Input to Display Board | At Display Board | Volts | Test points A and B | 3.0 VAC<br>If voltage is present and no display is indicated, replace display board.<br>If no voltage is present, check wire harness connections and H.V. board. |

## H.V. Board – Relay Test

| Relay | Function | Test Set-Up | Meter Setting | Probe Placement | Results |
|---|---|---|---|---|---|
| K8 | Magnetron **1** (Top rear) at 230 VAC | All wires connected to H.V. board | VAC | E2 (Black wire) & J4 pin 2 (Red wire) | Test mode 1 off - line voltage<br>Test mode 1 on - 0 volts |
| K9 | Magnetron 1 (Top rear) at 208 VAC | All wires connected to H.V. board | VAC | E2 (Black wire) & J4 pin 1 (White wire) | Test mode 1 off - line voltage<br>Test mode 1 on - 0 volts |
| K4 | Magnetron **2** (Top front) at 230 VAC | All wires connected to H.V. board | VAC | E5 (Red wire) & J3 pin 1 (Gray wire) | Test mode 2 off - line voltage<br>Test mode 2 on - 0 volts |
| K5 | Magnetron 2 (Top front) at 208 VAC | All wires connected to H.V. board | VAC | E5 (Red wire) & J3 pin 3 (Orange wire) | Test mode 2 off - line voltage<br>Test mode 2 on - 0 volts |
| K6 | Magnetron **3** (Bottom) at 230 VAC | All wires connected to H.V. board | VAC | J4 pin 4 (Black wire) & J4 pin 6 (Black wire) | Test mode 3 off - line voltage<br>Test mode 3 on - 0 volts |
| K7 | Magnetron 3 (Bottom) at 208 VAC | All wires connected to H.V. board | VAC | J4 pin 4 (Black wire) & J4 pin 5 (Brown wire) | Test mode 3 off - line voltage<br>Test mode 3 on - 0 volts |

# Component Testing Procedures

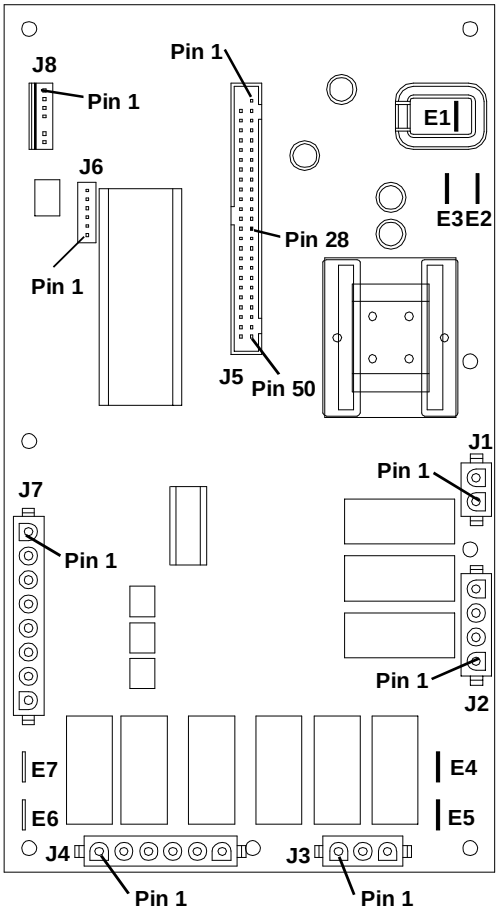
**⚠ WARNING**

To avoid risk of electrical shock, personal injury or death: disconnect power to oven and discharge capacitor before servicing, unless testing requires power.

**H.V. board**

**12559103Q**
P1326305M

**59001120**
P1329111M
P1329603M
P1329615M




| Function | Test Set-Up | Meter Setting | Probe Placement | Results |
|---|---|---|---|---|
| Input to H.V. board | At H.V. board | Volts | J1 pin 1 (Brown wire) & J1 pin 2 (White wire) | Line voltage |
| Output to display board | Disconnect J5 connector, blower runs continuously | Volts | J5 pin 28 & J5 pin 50 | - 24 VDC |

**NOTE: For the following test, place oven in Service Test Mode (see page XX).**

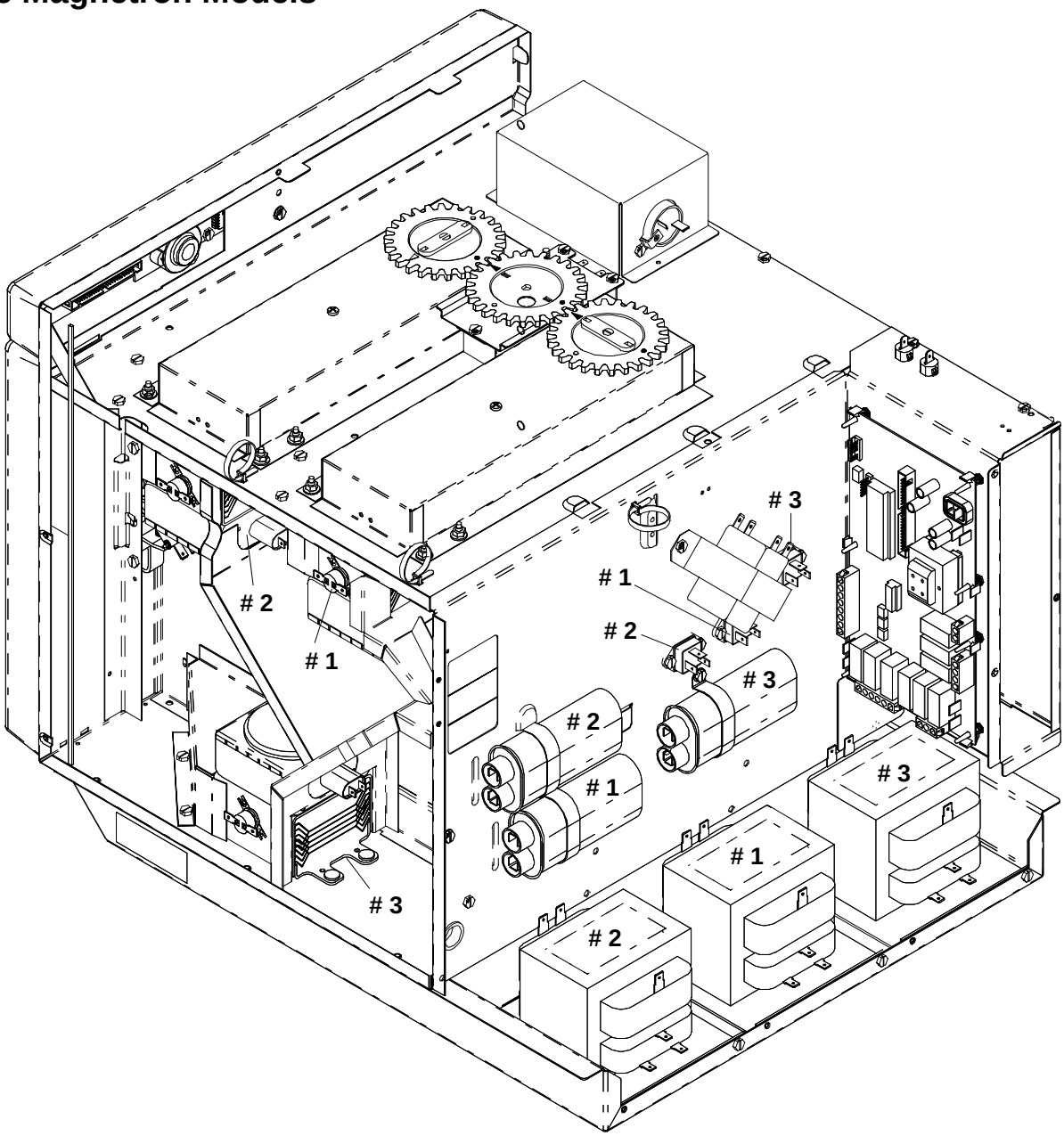
| Relay | Function | Test Set-Up | Meter Setting | Probe Placement | Results |
|---|---|---|---|---|---|
| K1 at 230 VAC line voltage | Blower motor Antenna motor Cavity light | Disconnect J2 connector | Ohms | J1 pin 1 (Brown wire) & J2 pin 4 | Test mode 5 off - no continuity<br>Test mode 5 on - < 1 Ω |
| K2 at 208 VAC line voltage | Blower motor Antenna motor Cavity light | Disconnect J2 connector | Ohms | J1 pin 1 (Brown wire) & J2 pin 3 | Test mode 5 off - no continuity<br>Test mode 5 on - < 1 Ω |

# Component Testing Procedures

**WARNING**

To avoid risk of electrical shock, personal injury or death: disconnect power to oven and discharge capacitor before servicing, unless testing requires power.

## Three Magnetron Models




| H.V. System # 1 | H.V. System # 2 | H.V. System # 3 |
|---|---|---|
| Top Rear Magnetron | Top Front Magnetron | Bottom Magnetron |
| Center Transformer | Left Transformer | Right Transformer |
| Bottom Center Capacitor | Top Left Capacitor | Right Capacitor |
| Diode | Diode | Diode |
| Center Triac | Left Triac | Right Triac |

# Power Testing Procedure

**⚠ WARNING**

To avoid risk of electrical shock, personal injury or death: disconnect power to oven and discharge capacitor before servicing, unless testing requires power.

## Power Test (Traditional Test Method)

Test equipment required: Amana power test kit R0157397 (Fahrenheit) or
Menumaster power test kit M95D5 (Celsius).

1. Fill the plastic container to the 1000 ml. line or Wendy's plastic 1/9 x 4" deep pan with cool tap water.
2. Using the thermometer; stir the water, measure, and record the water temperature.
   **Initial water temperature should be approximately 60°F (16°C).**
3. Place container on the center of the oven shelf and heat the water for **33 seconds for ovens with more than 1550 watts**. "2 BAG PITA", "BACON" or "2 DOZ BUN" pads will allow enough time to complete the test.

**NOTE:** Use a watch second hand, not the oven timer.

4. Stir the water, measure and record the temperature of the water after heating time is complete.
5. Subtract the starting water temperature (Step 2), from the ending water temperature (Step 4) to obtain the temperature rise (ΔT).
6. See the Traditional Power Test Temperature Chart below.

**NOTES:**
- The IEC-705 test method requires precision measurements and equipment. It is not practical to perform the IEC test in the field. To convert the traditional power test results to the approximate IEC-705 rating, take the traditional power test results and add 100 watts per magnetron for the unit being tested.

  **Example:** 1682 — watts output using the traditional power test for model WDYRC2
  + 300 — watts (3 magnetrons X 100 watts)
  1982 — Approximate IEC-705 results

- Always perform power test three times for accuracy, changing the water after each test is performed.
- Variation or errors in the test procedure will cause a variance in the temperature rise. Additional power tests should be made if temperature rise appears marginal.
- Low line voltage will cause lower temperature rise.

## Traditional Power Test Temperature Chart

THIRTY-THREE (33) SECONDS run time chart for units more than 1550 Watts cooking power

| Fahrenheit | | | | Celsius | | | |
|---|---|---|---|---|---|---|---|
| ΔT (°F) | Cooking Power Output | ΔT (°F) | Cooking Power Output | ΔT (°C) | Cooking Power Output | ΔT (°C) | Cooking Power Output |
| 16 | 1240 | 24 | 1860 | 11 | 1540 | 14 | 1960 |
| 17 | 1317 | 25 | 1937 | 11.5 | 1610 | 14.5 | 2030 |
| 18 | 1395 | 26 | 2015 | 12 | 1680 | 15 | 2100 |
| 19 | 1472 | 27 | 2092 | 12.5 | 1750 | 15.5 | 2170 |
| 20 | 1550 | 28 | 2170 | 13 | 1820 | 16 | 2240 |
| 21 | 1627 | 28 | 2170 | 13.5 | 1890 | 16.5 | 2310 |
| 22 | 1705 | 29 | 2247 | | | | |
| 23 | 1782 | 30 | 2325 | | | | |

# Power Testing Procedure

**⚠ WARNING**

To avoid risk of electrical shock, personal injury or death; disconnect power to oven and discharge capacitor before servicing, unless testing requires power.

## Amana WDYRC Bun/Pita Warmer
## Performance Test for Store Personnel Use

This test should be performed once a month or anytime unit performance is suspect.

1. Fill the plastic 1/9 x 4” deep pan used to hold bun bag clips with tap water. **Do not use metal pan.**
2. With an accurate digital thermometer probe, gently stir the water in the pan and write down the water temperature. **Remove thermometer probe.**
3. Position pan in center of oven.
4. Close the door and press the 2 DOZ BUN start button.
5. Immediately after the end of cycle tones begin, open the door and insert the digital thermometer probe into the water.
6. Gently stir the water in the pan until the maximum water temperature is observed (approximately 10-15 seconds).
7. Write down the maximum water temperature.
8. Subtract the initial water temperature reading from the last temperature reading.
9. If the temperature difference is greater then 44° F, the unit is performing within normal power tolerances.
10. If the temperature difference is less than 44° F, the unit may not be operating correctly. **Do not continue to use this unit until a qualified service technician has looked at the unit and corrected any problem.**

# Display Diagnostics

**⚠ WARNING**

To avoid risk of electrical shock, personal injury, or death, disconnect power to oven and discharge capacitor before servicing, unless testing requires it.

**⚠ CAUTION**

All repairs as described in this troubleshooting section are to be performed only after the caution procedures one through eight listed below have been followed.

1. Check grounding before checking for possible causes.
2. Be careful of the high voltage circuit.
3. Discharge high voltage capacitor.
4. When checking the continuity of the switches or the high voltage transformer, disconnect one lead wire from these parts and then check continuity with the AC plug removed. To do otherwise may result in a false reading or damage to your meter.
5. Do not touch any parts of the circuitry on the P.C. Board circuit since static electric discharge may damage this control panel. Always touch yourself to ground while working on this panel to discharge any static charge in your body.
6. 208/230 VAC is present in the high voltage circuit board, power relay and primary circuit of low voltage transformer.
7. When troubleshooting, be cautious of possible electrical hazard.
8. When testing convection operation, convection fan may start at any time or if oven is hot.

## Error Codes

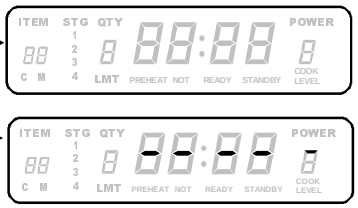
During operation, the display may show the following service codes:

**NOTE:** Before scheduling service for any error codes, instruct customer to unplug oven for 1 minute, reconnect power, and retest. If unit operates properly, no service call is required.

| Display | Description | Corrective Action |
|---|---|---|
| Err1 | Failed H.V. Board | Replace H.V. Board. |
| Err2 | Failed H.V. Board<br>Shorted Touch Panel<br>Shorted Display Board<br>Shorted Cable HV to Display Board | Replace H.V. board.<br>Replace Touch Panel.<br>Replace Display Board.<br>Replace Cable. |
| Err3 | Failed H.V. Board | Replace H.V. board. |
| Err4 | Failed H.V. Board | Replace H.V. Board. |
| Err5 | Shorted Touch Panel | **NOTE:** If Touch Panel is pressed for more than 30 seconds, this error code will appear.<br>1. Disconnect oven from power supply.<br>2. Disconnect side touch panel connector from display board (J5).<br>3. Reconnect oven to power supply.<br>4. If “Err5” reappears after 30 seconds, replace top touch panel.<br>5. If “Err5” does not reappear after 30 seconds, replace side touch panel. |
| Err6 | Failed H.V. Board | Replace H.V. board. |
| HOT | | • Open TCO (magnetron).<br>• Blower motor inoperative.<br>• Restricted air filter.<br>• H.V. board inoperative.<br>• High ambient temperature.<br>• Oven operated empty or with light loads.<br>• Broken or loose wire. |
| Door | Door Interlock Primary Switch | • Verify latch mechanism moves freely on door.<br>• Verify J1 connector on display board is properly seated.<br>• Test interlock switch assembly and perform door adjustment if necessary.<br>• Replace interlock switch assembly. |

# Service Test

**NOTE: Unit must be in OFF condition or INITIAL power up mode.**

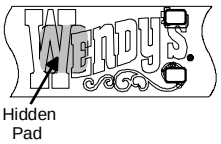


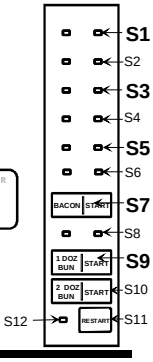
## To Enter Service Test Mode, oven door must be closed.

**NOTE: Pads will not beep when accessing Service Test Mode.**
**To EXIT Service Test Mode press STOP/RESET pad.**

### Accessing Service Test Mode

1. Press Hidden pad, on top touch panel.
2. Press S1, S3, S5, S7, and S9 pads, on side touch panel.
3. Display indicates Service Test Mode.






0 = Deactivated
1 = Activated

Indicates Service Mode

| Press Pad | Display Indication | Component Evaluation |
|---|---|---|
| **High Voltage System # 1**<br>**S1**<br>Toggles Magnetron 1 (Top Rear) ON/OFF. | Displays actual Amperage, will vary by model<br> <br>Timer counts up to 62 seconds and unit shuts off. | If no Amperage, check for line voltage at H.V. transformer primary winding.<br>If no voltage, check:<br>• Interlock switch (secondary)<br>• Triac 1<br>• H.V. board (relay K8 if 230 VAC, K9 if 208 VAC, and triac 1 drive voltage T1 - G)<br>• Wiring<br>If voltage is present, check:<br>• H.V. components and wiring. |
| **High Voltage System # 2**<br>**S2**<br>Toggles Magnetron 2 (Top Front) ON/OFF. | Displays actual Amperage, will vary by model<br> <br>Timer counts up to 62 seconds and unit shuts off. | If no Amperage, check for line voltage at H.V. transformer primary winding.<br>If no voltage, check:<br>• Interlock switch (secondary)<br>• Triac 2<br>• H.V. board (relay K4 if 208 VAC, K5 if 230 VAC, and triac 2 drive voltage T1 - G)<br>• Wiring<br>If voltage is present, check:<br>• H.V. components and wiring. |
| **High Voltage System # 3**<br>**S3**<br>Toggles Magnetron 3 (Bottom) ON/OFF. | Displays actual Amperage, will vary by model<br> <br>Timer counts up to 62 seconds and unit shuts off. | If no Amperage, check for line voltage at H.V. transformer primary winding.<br>If no voltage, check:<br>• Interlock switch (secondary)<br>• Triac 3<br>• H.V. board (relay K6 if 230 VAC, K7 if 208 VAC, and triac 3 drive voltage T1 - G)<br>• Wiring<br>If voltage is present, check:<br>• H.V. components and wiring. |

# Service Test

| Press → | Display | Component Evaluation |
|---|---|---|
| **S4** → NOT ACTIVE | | • This mode is NOT active with this model. |
| **S5** → Toggles Blower Motor Antenna Motor(s) Cavity Light (if applicable) ON/OFF. | | If no fan operation, check:<br>• Blower motor and wheel<br>• Antenna motor<br>• Cavity light (if applicable)<br>• H.V. board relay K1 - 230 V<br>relay K2 - 208V<br>• Wiring |
| **S6** → NOT ACTIVE | | • This mode is NOT active with this model. |
| **S7** → Displays # of Magnetron Hours. | | |
| **S8** → Displays # of Door Cycles with a 1 to 1 ratio rounded to the nearest ten | | |
| **S9** → Clears Hours and Cycles (press START to activate) (Resets to 0). | | |

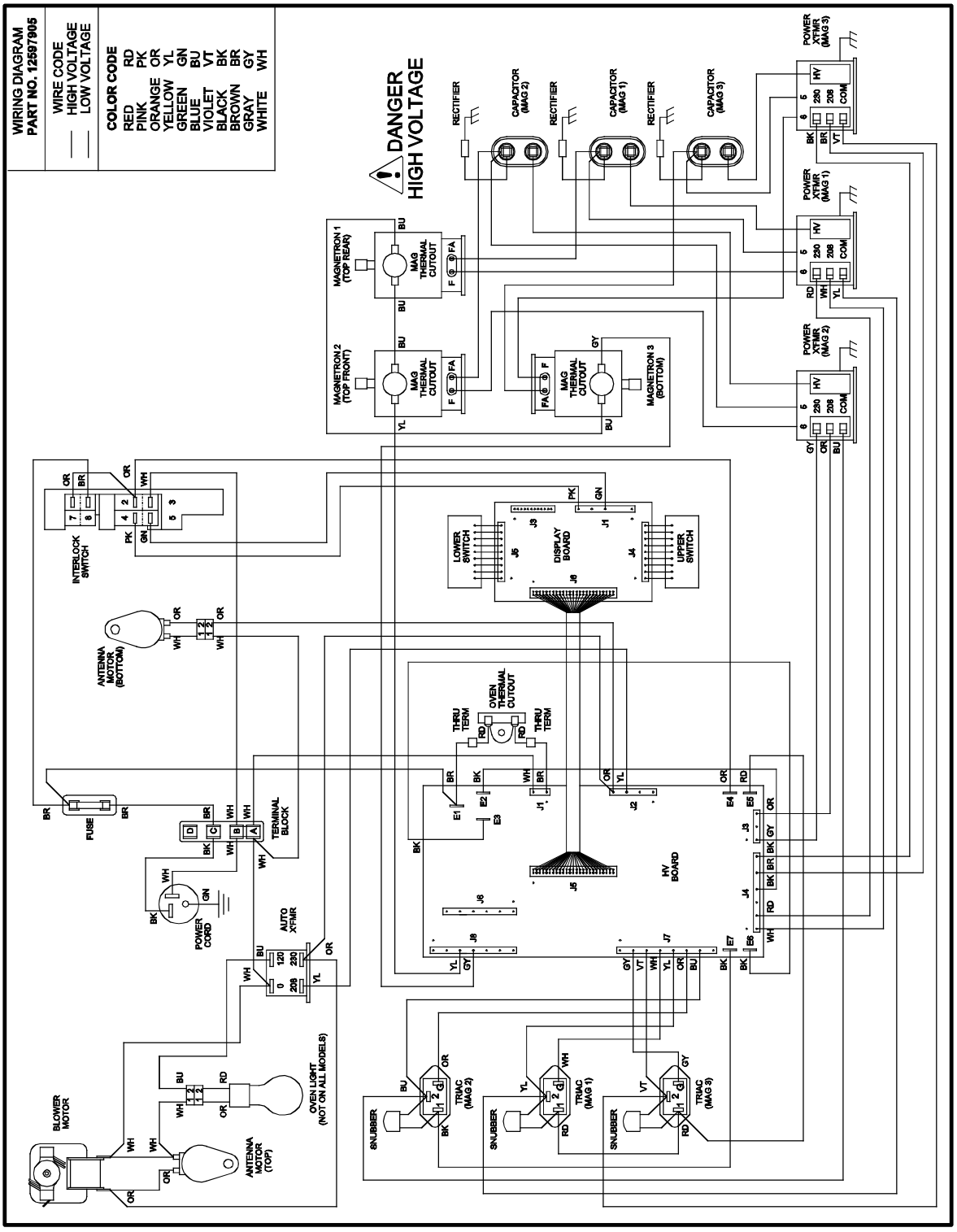
**NOTE:** This will not appear on later production models.

| | | |
|---|---|---|
| **S10** → Temperature OFFSET NOT APPLICABLE | | • Temperature OFFSET is NOT applicable with this model. |

# Schematic

**WARNING**

To avoid risk of electrical shock, personal injury or death: disconnect power to oven and discharge capacitor before servicing, unless testing requires power.

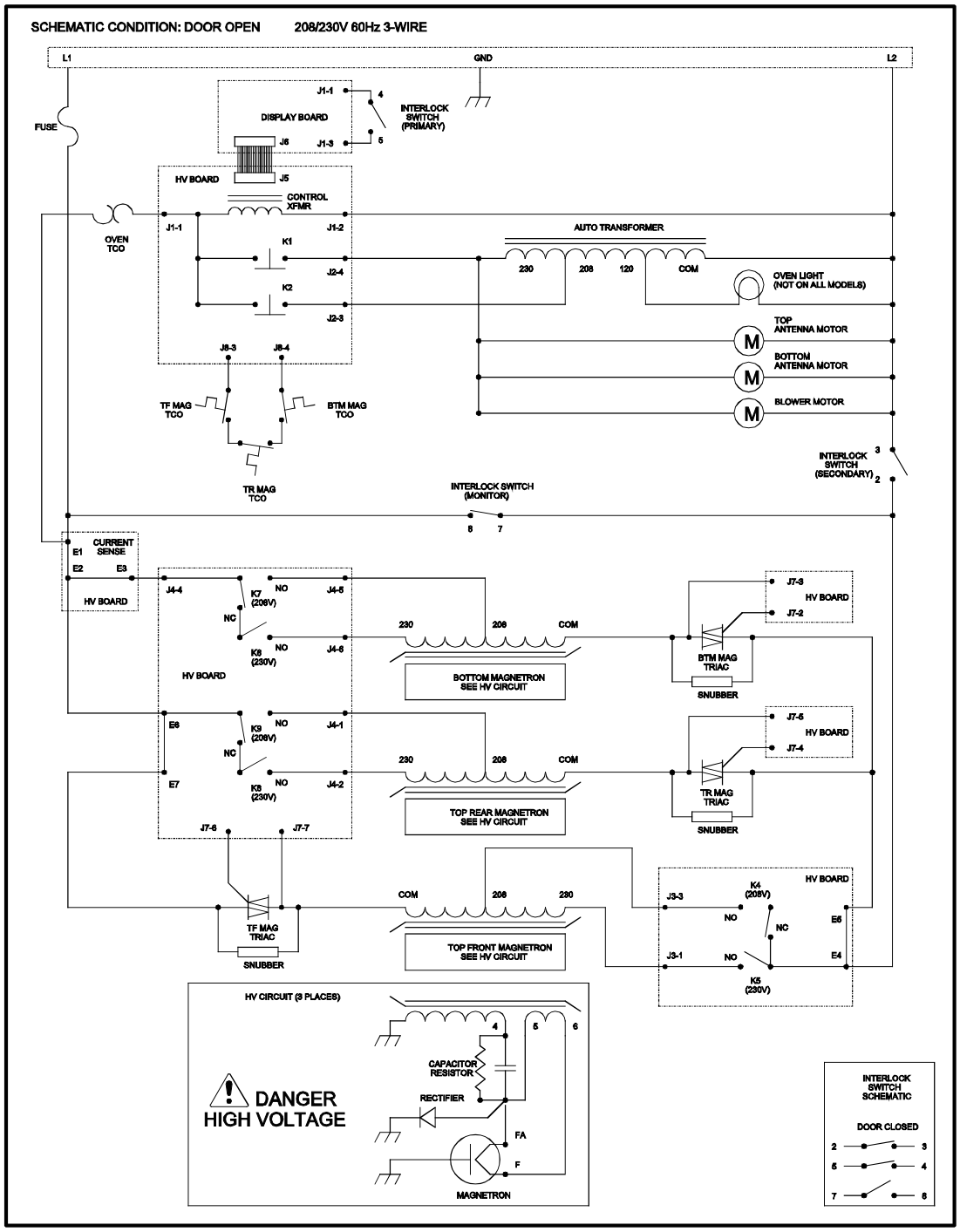



**WDYRC2 P1326305M**

# Wiring Diagram

**WARNING**

To avoid risk of electrical shock, personal injury or death: disconnect power to oven and discharge capacitor before servicing, unless testing requires power.




**WDYRC2 P1326305M**

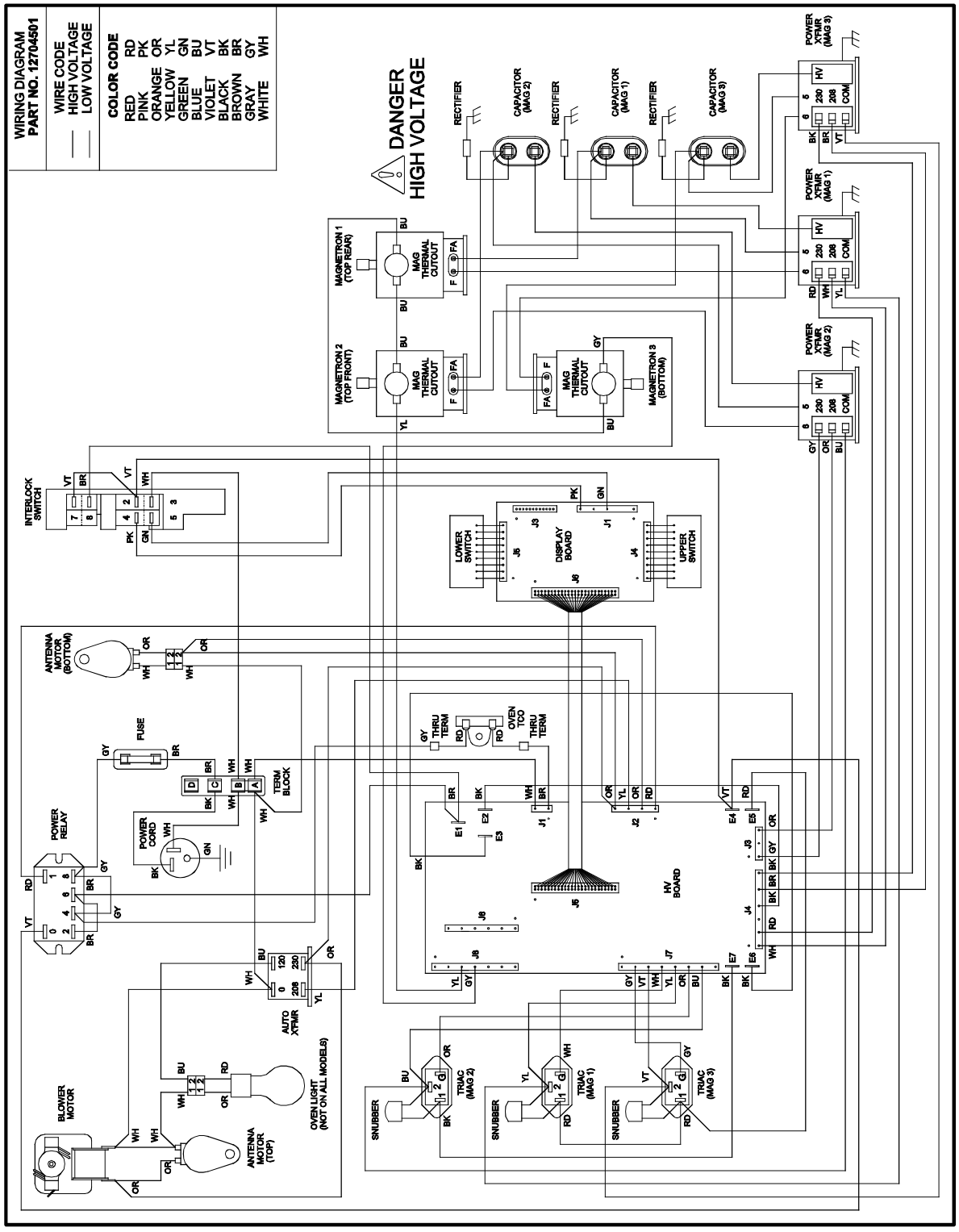
**DANGER**

**HIGH VOLTAGE**

# Schematic

**WARNING**

To avoid risk of electrical shock, personal injury or death: disconnect power to oven and discharge capacitor before servicing, unless testing requires power.

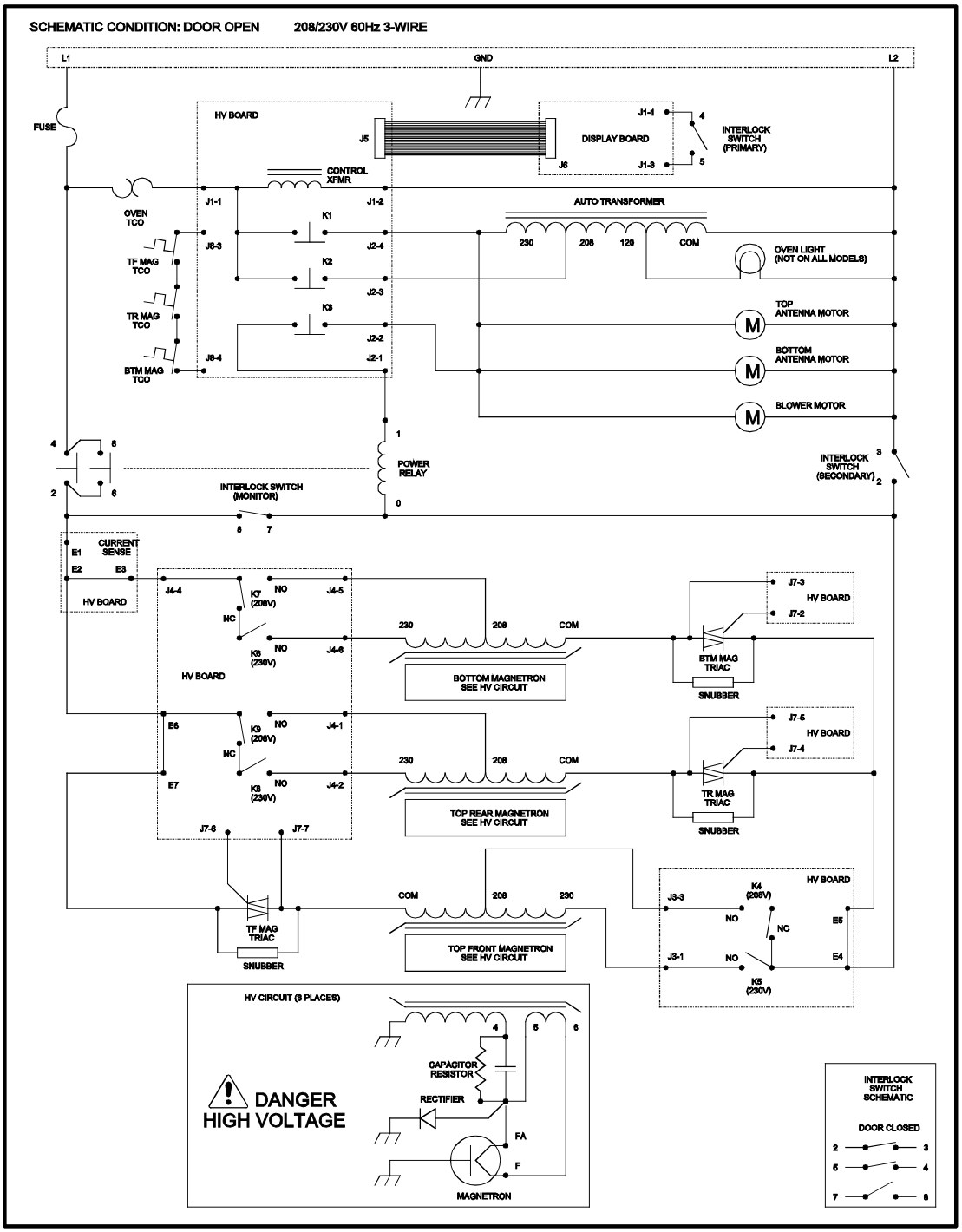



**WDYRC2 P1329111M**

# Wiring Diagram

**WARNING**

To avoid risk of electrical shock, personal injury or death: disconnect power to oven and discharge capacitor before servicing, unless testing requires power.




**WDYRC2 P1329111M**

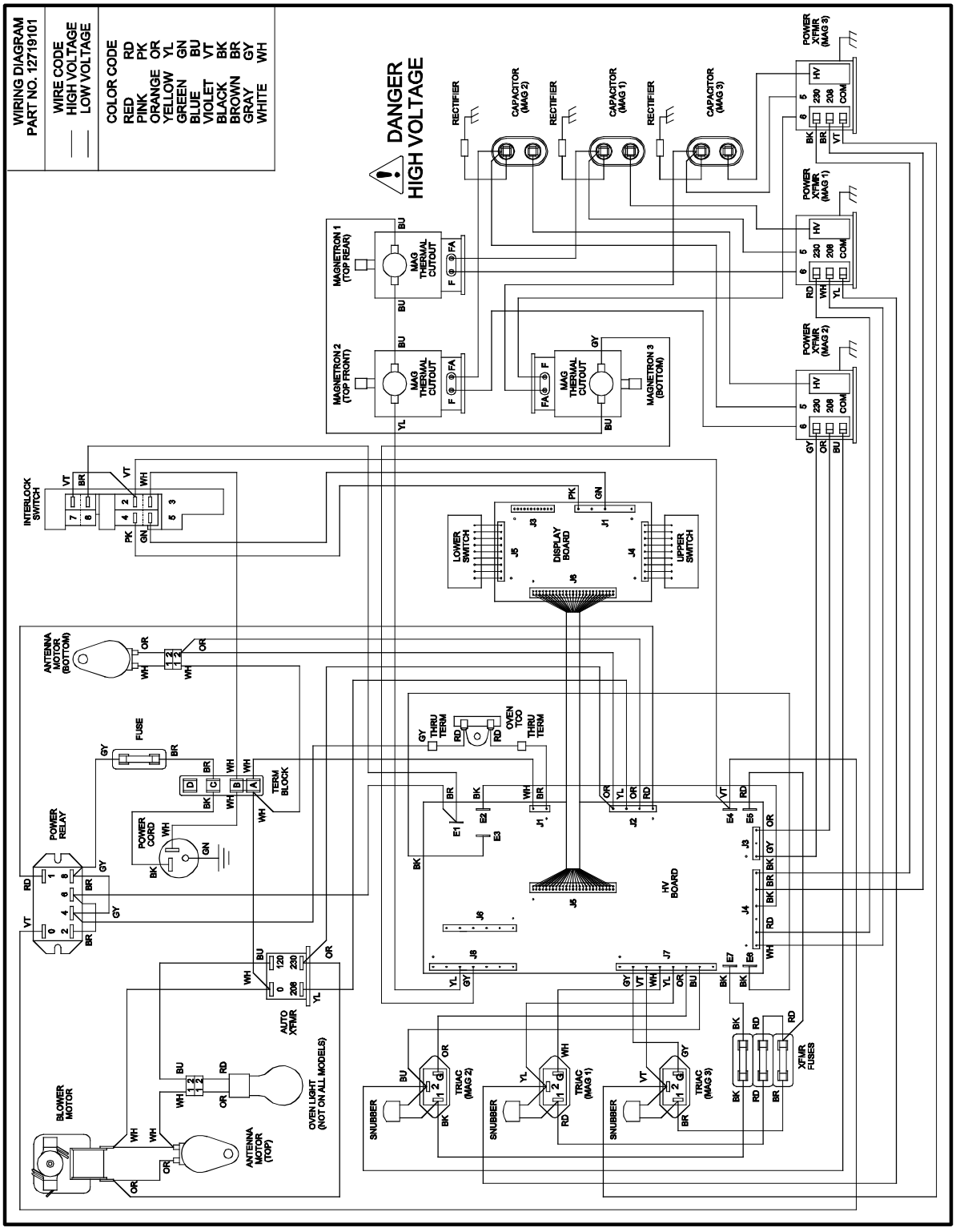
**DANGER**

**HIGH VOLTAGE**

# Schematic

**WARNING**

To avoid risk of electrical shock, personal injury or death: disconnect power to oven and discharge capacitor before servicing, unless testing requires power.

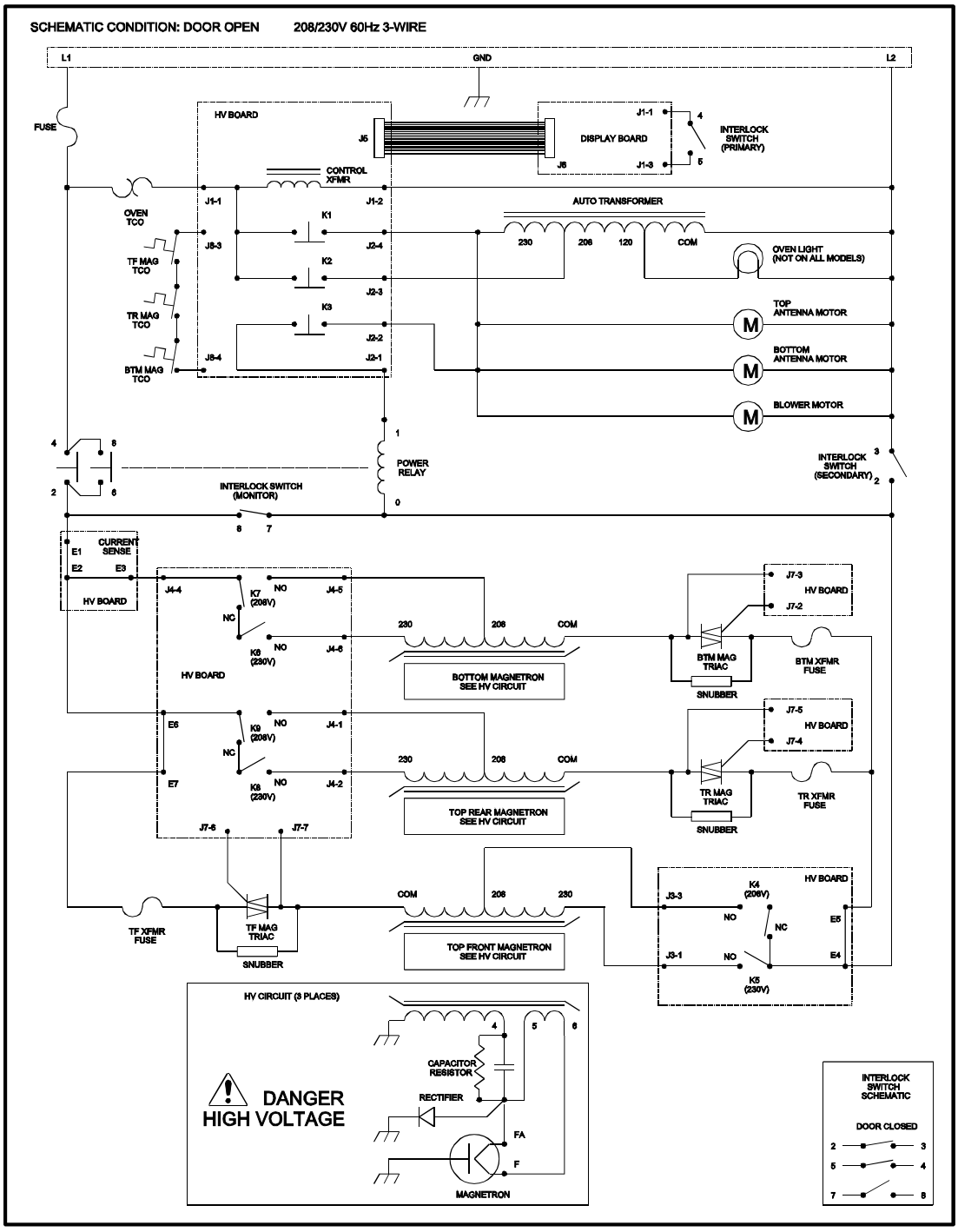



**WDYRC2 P1329603M, P1329615M**

# Wiring Diagram

**WARNING**

To avoid risk of electrical shock, personal injury or death: disconnect power to oven and discharge capacitor before servicing, unless testing requires power.




**WDYRC2 P1329603M, P1329615M**

**DANGER**

**HIGH VOLTAGE**